Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. **(Currently Amended)** A matched filter for implementing the correlation of ~~an~~ input signals and ~~a~~ reference signals, the matched filter comprising:

first means for storing M samples taken from N ~~received~~ input signals, wherein N≥2, and in which said M samples of the N input signals are stored one sample at a time at said N input signals' frequencies ~~the sample frequency of the input signal~~;

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second means for storing K M-sample long reference signals, wherein ~~K≥1~~ K≥2;

multiplexing means for applying one of said N input signals and one of said M-sample long reference signals at a time from said first and second storage means to ~~correlation~~ calculation means by applying alternately at least one combination of the N input signals and the M-sample long reference signals; and

calculation means for calculating the correlation time-dividedly for a combination of ~~an~~ said N input signals and ~~a~~ said M-sample long reference signals so that correlation results calculated from different signals appear at the output of the calculation means as a sequence.

2. **(Currently Amended)** A matched filter as claimed in claim 1, wherein said calculation means comprises a comparator for comparing each sample of the N input signals with the corresponding sample of the M-sample long reference signals and gives M 1-bit comparison results, and an adder means for summing up said M 1-bit comparison results and generating a correlation result at the output of the filter.

3. **(Original)** A matched filter as claimed in claim 2, wherein said comparator is one of the following: a multiplier, an XOR circuit or an XNOR circuit.

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4. **(Currently Amended)** A matched filter for implementing the correlation of ~~an~~ input signals and ~~a~~ reference signals, the matched filter comprising:

first means for storing M samples taken from N input ~~received~~ signals and for storing said M samples of the N input signals one ~~sample~~ at a time at said N input signals' frequencies ~~the sample frequency of the input signal~~;

second means for storing K M-sample long reference signals, wherein $K \geq 2$;

multiplexing means for applying ~~the~~ one of said N input signals and one of said M-sample long reference signals at a time from said first and second storage means to ~~correlation~~ calculation means by applying alternately at least

one combination of the N input signals and the M-sample long reference signals to the calculation means; and

calculation means for calculating the correlation time-dividedly for each combination of ~~an~~ said N input signals and ~~a~~ said M-sample long reference signals so that correlation results calculated from different combinations appear at the output of the calculation means as a sequence.

5. **(Currently Amended)** A matched filter as claimed in claim 4, wherein said calculation means comprises a comparator for comparing each of said M samples of the N input signals with ~~the~~ a corresponding sample ~~of the~~ from said M-sample long reference signals and gives M 1-bit comparison results, and an adder means for summing up said M 1-bit comparison results and generating a correlation result at the output of the filter.

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6. **(Original)** A matched filter as claimed in claim 5, wherein said comparator is one of the following: a multiplier, an XOR circuit or an XNOR circuit.

7. **(Currently Amended)** A spread spectrum receiver comprising a device for detecting a demodulated signal, received by the receiver and converted into digital samples, the device comprising a matched filter for calculating the correlation between an ~~the~~ input signal and at least one reference signal, and a controller for comparing the correlation results generated by the matched filter

with a predetermined threshold value to determine if a signal is found, the matched filter comprising:

first means for storing M samples taken from N input ~~received~~ signals, wherein N≥2, and in which M samples of the N input signals are stored one sample at a time at ~~the sample~~ a frequency of each of the N input signals;

second means for storing K M-sample long reference signals, wherein ~~K≥1~~ K≥2;

multiplexing means for applying one of said N input signals and one of said M-sample long reference signals at a time from said first and second storage means to ~~correlation~~ calculation means by applying alternately at least one combination of the N input signal and the M-sample long reference signal to the calculation means; and

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calculation means for calculating the correlation time-dividedly for a combination of ~~an~~ said N input signals and ~~a~~ said M-sample long reference signals so that correlation results calculated from different signals appear at the output of the calculation means as a sequence.

8. **(Currently Amended)** A spread spectrum receiver as claimed in claim 7, wherein said calculation means comprises a comparator for comparing each sample of the N input signals with ~~the~~ a corresponding sample ~~of~~ from the M-sample long reference signals and gives M 1-bit comparison results, and an adder means for summing up said M 1-bit comparison results and generating a correlation result at the output of the filter.

9. **(Original)** A spread spectrum receiver as claimed in claim 8, wherein said comparator is one of the following: a multiplier, an XOR circuit or an XNOR circuit.

10. **(Currently Amended)** A spread spectrum receiver as claimed in claim 7, wherein the outputs of the matched filter are complex correlation samples, and that said device comprises ~~a counter~~ an arithmetic unit for squaring both components of the complex correlation sample and sums up the squared components.

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11. **(Currently Amended)** A spread spectrum receiver as claimed in claim 10, wherein the ~~counter~~ arithmetic unit sums up the correlation sample corresponding to the same phase difference of two or more input signals, the sum corresponding to a correlation result that is calculated with one phase difference and whose integration time is M · L samples, wherein M is the length of the matched filter in number of samples and L is the number of correlation samples summed up by an accumulator.

12. **(Currently Amended)** A spread spectrum receiver as claimed in claim 7, wherein said controller processes several comparison results corresponding to the same phase difference and M-sample long reference signal, and, in response to a predetermined proportion of the gathered comparison

results indicating that the output value exceeded said threshold value, declares the signal found.

13. **(Currently Amended)** A spread spectrum receiver comprising a device for detecting a demodulated signal, received by the receiver and converted into digital samples, the device comprising a matched filter for calculating the correlation between an input signal and at least one reference signal, and a controller for comparing the correlation results generated by the matched filter with a predetermined threshold value to determine if a signal is found, said matched filter comprising:

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first means for storing M samples taken from N ~~received~~ input signals, wherein N≥1, and in which said M samples of the N input signals are stored one sample at a time at ~~the~~ a sample frequency for each of said N input signals ~~of the input signa~~l;

second means for storing K M-sample long reference signals, wherein K≥2;

multiplexing means for applying ~~the~~ one of said N input signals and one of said M-sample long reference signals at a time from said first and second storage means to ~~correlation~~ calculation means by applying alternately at least one combination of the N input signals and one of the M-sample long reference signals to the calculation means; and

calculation means for calculating the correlation time-dividedly for each combination of ~~an~~ the N input signals and ~~a~~ the M-sample long reference

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signals so that correlation results calculated from different combinations appear at the output of the calculation means as a sequence.